

AMENDMENTS TO THE CLAIMS:

(with complete listing)

1. (Currently amended) In a buoyant vessel (100) floating in a sea and comprising a hull (102) having a plurality of watertight compartments for ballasting said vessel, the improvement comprising,

a plurality of caissons (54) disposed within said hull, each of said plurality of watertight compartments having a lower portion fluidly coupled to a ~~unique~~ distinct one of said plurality of caissons, wherein each of said plurality of caissons is fluidly coupled to only one of said plurality of watertight compartments, extending generally vertically from said coupled lower portion of said compartment to an upper portion of said hull and designed and arranged for receiving a submersible pump (111, 121, 123).

2. (Currently amended) The vessel of claim 1 further comprising,

a vent line (58) fluidly coupled between one of said plurality of watertight compartments and a said ~~unique~~ distinct caisson.

3. (Original) The vessel of claim 1 further comprising,

a manifold system (92) fluidly coupled to a source of ballast water (90) via a first isolation valve (91), fluidly coupled to a first submersible pump (121) disposed in one of said plurality of caissons (54) via a second isolation valve (107) and a first coupling (127), fluidly coupled to said plurality of caissons (54) via a third isolation valve (105) and a second coupling (114), and fluidly coupled to an overboard discharge pipe (94) via a fourth isolation valve (95).

4. (Original) The vessel of claim 3 further comprising,

an external caisson (56) disposed external to said hull (102) and in fluid communication with the sea, wherein

said manifold system (92) is designed and arranged for temporary fluid coupling to a second submersible pump (111) disposed in said external caisson (56).

5. (Currently amended) The vessel of claim 1 wherein,

at least one of said plurality of caissons (54) is fluidly coupled to a void ~~(52)~~ by a branch pipe (51) having an isolation valve (53).

6. (Original) The vessel of claim 1 wherein,

at least two of said plurality of caissons (54) are disposed within a housing caisson (52).

7. (Original) A ballasting/de-ballasting system for a tension leg platform (100) having a hull (102) and at least one column (1, 2, 3, 4) attached thereto and extending vertically upwards, the system comprising,

at least two ballast arrangements, each said ballast arrangement comprising a watertight compartment (X1, X2, X3, 8) and a caisson (10, 20, 30, 80) which is in non-isolatable fluid communication with said watertight compartment and extends generally vertically upward from said watertight compartment into one of said at least one column, and

a submersible pump (121, 123) designed and arranged for use within said caisson.

8. (Original) The system of claim 7 further comprising,

a manifold system (92) designed and arranged for isolatable fluid coupling to a source of ballast water (90), isolatable temporary fluid coupling to said submersible pump, isolatable temporary fluid coupling to said caisson, and isolatable fluid coupling to an overboard discharge pipe (94).

9. (Currently amended) A method for ballasting a vessel comprising the steps of,

coupling a source of ballast water with a removable conduit to a first caisson which is in non-isolatable fluid communication with a first watertight compartment,

filling said first watertight compartment with water from said source of water,
decoupling said source of ballast water from said first caisson,
coupling said source of ballast water with said removable conduit to a second caisson
which is in non-isolatable fluid communication with a second watertight compartment, and
filling said second watertight compartment with water from said source of water.

10. (Original) The method of claim 9 further comprising the steps of,

lowering a submersible pump into a third caisson in fluid communication with the sea,
wherein discharge of water from said submersible pump provides said source of ballast water.

11. (Original) The method of claim 9 wherein,

said source of ballast water is provided from a firemain.

12. (Currently amended) A method for de-ballasting a vessel comprising the steps of,

lowering a first submersible pump into a first caisson which is in non-isolatable fluid
communication with a first watertight compartment,

coupling a discharge of said first submersible pump with a first removable conduit to an
overboard discharge

pumping water with said submersible pump from said first watertight compartment
overboard,

lowering a second submersible pump into a second caisson which is in non-isolatable
fluid communication with a second watertight compartment,

coupling discharge of said second submersible pump with a second removable conduit to
said overboard discharge, and

pumping water with said second submersible pump from said second watertight
compartment overboard.

13. (Original) The method of claim 12 further comprising the steps of,
raising said first submersible pump from said first caisson, and
lowering said first submersible pump into said second caisson, wherein said first submersible pump is said second submersible pump.
14. (Original) The method of claim 13 wherein,
said first removable conduit is said second removable conduit.
15. (Currently amended) A buoyant vessel (100) floating in a sea comprising,
a hull (102),
a plurality of watertight compartments for ballasting, and
a plurality of caissons (54) disposed within said hull, each of said plurality of watertight compartments having a lower portion fluidly coupled (50) to one of said plurality of caissons, each of said plurality of caissons being fluidly coupled to only one of said plurality of watertight compartments and extending generally vertically from a lower portion of said hull to an upper portion of said hull, each of said plurality of caissons designed and arranged to receive a suction line with a first end disposed near said lower portion of said hull and a second end coupled to a pump disposed in said upper portion of said hull.
16. (Original) The vessel of claim 15 wherein said suction line comprises a check valve disposed near said lower portion of said hull.

REMARKS

Claims 1 and 15 are amended to more clearly distinguish the applicant's invention over Wetch et al. (U.S. 6,378,451) by adding the limitation that each caisson is fluidly coupled to only one watertight compartment. This invention eliminates the need for isolation valves located low in the hull to control ballast flow to or from the varying ballasting compartments, and the added limitations more accurately reflect the structure of the invention. Wetch et al. disclose a caisson which is fluidly coupled to multiple compartments and thus does not anticipate the invention claimed in amended claims 1 and 15.

Claims 1 and 2 are amended to more correctly defined the relationship between the plurality of watertight compartments and the plurality of caissons. The amendments change each compartment from being coupled to a unique one of said plurality of caissons to being coupled to a distinct one of said plurality of caissons.

Claims 7, 9, and 12 are amended to more clearly distinguish the applicant's invention over Wetch et al. by adding the limitation that the caisson is in non-isolatable communication with the watertight compartment. This added limitation more accurately reflects the valve-less structure of the ballasting system according to the invention. Wetch et al. disclose caissons which are in isolatable fluid communication with the watertight compartments, because the Welch et al. system uses valves between the caissons and the compartments. Therefore, amended claims 7, 9 and 12 are not anticipated by Welch et al.

In the specification and claims, reference numeral 52 refers to both the housing caissons and void compartments. The drawings, however, only use reference numeral 52 to refer to the housing caissons. Therefore, claim 6 and the specification are amended to remove reference numeral 52.

Claims 1-16 as amended are not anticipated by Wetch et al. Allowance of claims 1-16 and passage to issue is requested.

Respectfully submitted,

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